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APPLICATION NUMBER: *10/126,623*
FILING DATE: *April 22, 2002*

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PTO/SB/05 (03-01)
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. 1.53(b))

Attorney Docket No.	004770.00047
First Inventor	Mikko MAKIPAA
Title	System and Method for Bookmarking Broadcast Radio Stations and Associated Internet Addresses
Express Mail Label No.	

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17)
   (Submit an original and a duplicate for fee processing)

2. ☐ Applicant claims small entity status.
   See 37 CFR 1.27.

3. ☒ Specification   [Total Pages 20]
   (preferred arrangement set forth below)
   - Descriptive title of the Invention
   - Cross Reference to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to sequence listing, a table,
     or a computer program listing appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings (if filed)
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure

4. ☒ Drawing(s) (35 U.S.C.113)   [Total Sheets 8]

5. Oath or Declaration   [Total Pages 3]
   a. ☒ Newly executed (original or copy)
   b. ☐ Copy from a prior application (37 CFR 1.63 (d))
      (for a continuation/divisional with Box 18 completed)
      i. ☐ DELETION OF INVENTOR(S)
      Signed statement attached deleting inventor(s)
      named in the prior application, see 37 CFR
      1.63(d)(2) and 1.33(b).

6. ☒ Application Data Sheet. See 37 CFR 1.76

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

7. ☐ CD-ROM or CD-R in duplicate, large table or
      Computer Program (Appendix)

8. Nucleotide and/or Amino Acid Sequence Submission
   (if applicable, all necessary)
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ paper
   c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATIONS PARTS

9. ☒ Assignment Papers (cover sheet & document(s))
10. ☐ 37 C.F.R.§3.73(b) Statement   ☐ Power of Attorney
    (when there is an assignee)
11. ☐ English Translation Document (if applicable)
12. ☐ Information Disclosure   ☐ Copies of IDS Citations
    Statement (IDS)/PTO-1449
13. ☐ Preliminary Amendment
14. ☒ Return Receipt Postcard (MPEP 503)
    (Should be specifically itemized)
15. ☐ Certified Copy of Priority Document(s)
    (if foreign priority is claimed)
16. ☐ Nonpublication Request under 35 U.S.C. 122
    (b)(2)(B)(i). Applicant must attach form PTO/SB/35
    or its equivalent.
17. ☐ Other: _____

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment,
or in an Application Data Sheet under 37 CFR 1.76:
☐ Continuation   ☐ Divisional   ☐ Continuation-in-part (CIP)   of prior application No: _____/_____
Prior application information: Examiner _____   Group / Art Unit: _____

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied
under Box 5b, is considered a part of the disclosure of the accompanying or divisional application and is hereby incorporated by reference.
The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

☒ Customer Number or Bar Code Label   22,907   or ☐ Correspondence address below
  (Insert Customer No. or Attach bar code label here)

Name				
Address				
City		State		Zip Code
Country		Telephone		Fax

Name (Print/Type)	Bradley C. Wright Reg. No. 48,830	Registration No. (Attorney/Agent)	38,061
Signature	Anth. W. Kendare for Bradley C. Wright	Date	April 22, 2002

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FEE TRANSMITTAL
for FY 2002

Patent fees are subject to annual revision.

Complete if Known	
Application Number	To Be Assigned
Filing Date	Even Date Herewith
First Named Inventor	Mikko MAKIPAA
Examiner Name	To Be Assigned
Group / Art Unit	To Be Assigned

TOTAL AMOUNT OF PAYMENT ($) 1530

Attorney Docket No.	004770.00047

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☒ Deposit Account:

Deposit Account Number: 19-0733

Deposit Account Name: Banner & Witcoff, Ltd.

The Commissioner is authorized to: *(check all that apply)*
☒ Charge fee(s) indicated below ☒ Credit any overpayments
☒ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	740
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	

SUBTOTAL (1) ($) 740

2. EXTRA CLAIM FEES

		Extra Claims	Fee from below		Fee Paid
Total Claims	43	-20** = 23	X 18	=	414
Independent Claims	7	-3** = 4	X 84	=	336
Multiple Dependent			X	=	0

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 750

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Fee ($)	Small Entity Fee Code	Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive – unavoidable	
141	1,280	241	640	Petition to revive – unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17 (q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	40
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid SUBTOTAL (3) ($) 40

SUBMITTED BY

				Complete *(if applicable)*	
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Application Data Sheet

Application Information

Application number::

Filing Date::

Application Type::   Regular

Subject Matter::   Utility

Suggested classification::

Suggested Group Art Unit::

CD-ROM or CD-R?::   None

Number of CD disks::

Number of copies of CDs::

Sequence submission?::

Computer Readable Form (CRF)?::

Number of copies of CRF::

Title::   SYSTEM AND METHOD FOR BOOKMARKING
         RADIO STATIONS AND ASSOCIATED
         INTERNET ADDRESSES

Attorney Docket Number:: 004770.00047

Request for Early Publication?:: NO

Request for Non-Publication?:: NO

Suggested Drawing Figure:: 1

Total Drawing Sheets::   8

Small Entity?::   NO

Latin name::

Variety denomination name::

Petition included?::   NO

Petition Type::

Licensed US Govt. Agency::

Contract or Grant Numbers::

Secrecy Order in Parent Appl.?:: NO

          1   Initial 04/22/02

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3   Initial 04/22/02

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4   Initial 04/22/02

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Correspondence Information

Correspondence Customer Number::   22907

Representative Information

Representative Customer Number::   22907

Domestic Priority Information

Application::	Continuity Type::	Parent Application::	Parent Filing Date::

Foreign Priority Information

Country::	Application number::	Filing Date::	Priority Claimed::

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SYSTEM AND METHOD FOR BOOKMARKING RADIO STATIONS AND ASSOCIATED INTERNET ADDRESSES

FIELD OF THE INVENTION

[01]   This invention relates generally to mobile terminal devices. More particularly, the present invention relates to a device having bookmark functionality for radio tuning capabilities and Internet website addressing.

BACKGROUND OF THE INVENTION

[02]   Preset radio buttons are common on conventional radios and are well known for use as programmable shortcuts to frequencies associated with favorite radio stations. Mobile data terminal devices that are capable of receiving FM radio transmissions are also known. Like conventional radios, these devices typically include options for storing frequencies associated with favorite radio stations and for quickly tuning to those frequencies. Unlike convention radios, however, many of these mobile devices are connected to data networks, which in turn provide access to the Internet through the device. Because such devices may simultaneously receive FM radio stations and browse the Internet, it is often desirable when listening to the radio to also view the content of a web page associated with the radio station. The content of such a web page may supplement the radio broadcast with further details and information related to the broadcast, or provide additional information such as local news and weather.

[03]   These mobile terminal devices, however, do not typically include a means for accessing, in parallel, Internet media and FM broadcast media associated with a radio station. To view web page content for a radio station while listening to the radio station broadcast, a user must typically tune to the radio station of interest, and independently navigate the Internet to find a web site associated with the radio station. The user may navigate to the radio station web site through the use of a pre-selected bookmark for the web site, and may tune to the radio broadcast with a radio station bookmark; however, the user nonetheless independently tunes the radio and navigates the web. The use of a preset radio button along with a web site bookmark requires the

- 1 -

user to employ separate steps for controlling access to each media source. Such a process is time-consuming and more complex than necessary. To address this shortcoming in such mobile terminal devices, solutions have been proposed.

[04] One proposed solution includes the use of digital radio services. Digital radio consists of radio broadcasts of data rather than analog transmissions. Because the data transmitted may include various types of information along with audio information, a mobile terminal device receiving digital radio broadcasts may view content associated with the audio radio broadcast. Radio stations broadcasting digital radio, therefore, can transmit information, such as traffic, weather, and advertising information, simultaneous with the audio broadcast. Unless the mobile terminal device is in communication with the Internet, however, the user is limited to one-way communication with the radio station. In other words, the user may be able to view information sent by the radio station, and may even be able to navigate through the information, but the user is unable to request different information or to interact with the radio station in two-way communication.

SUMMARY OF THE INVENTION

[05] The present invention provides a system and method for tuning a mobile terminal device to receive a media broadcast (e.g. a radio or television broadcast) while simultaneously navigating the Internet to interact with a web site associated with the media station. Bookmarks on such a device can have combined functionality, such that selection of a radio bookmark results in the device being tuned to a radio station associated with the bookmark and, at substantially the same time, connecting to a web site associated with the radio station. Accordingly, the usability of the device is greatly improved.

[06] In one embodiment, the present invention includes a mobile terminal device in communication with a data network that is capable of receiving radio broadcasts. The device generally includes a display screen, a storage medium, a keypad, a processor, a

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radio tuner, an antenna, and communication hardware. The processor is adapted to perform steps according to instructions stored in the storage medium. In one aspect of the invention, the device is adapted to receive analog FM radio media, and in another aspect of the invention, the device is adapted to receive digital radio broadcasts.

[07]   Radio bookmarks are stored in the storage medium and may be programmed and selected by a user. The bookmarks generally include handles or identifiers that point to various resources such as a file, an Internet protocol (IP) address, a uniform resource locator (URL), and the like. The bookmarks may also include parameters that further define the bookmarks. The radio bookmarks generally have combined functionality in that selection of a bookmark results in selection of both a network address and a radio frequency for a radio station associated with the bookmark. Accordingly, a user simply selects a radio bookmark in order to listen to the associated radio station broadcast and to view Internet content associated with the broadcast. The user, therefore, does not need to search for both a radio station and its web site.

[08]   In other embodiments of the invention, computer-executable instructions for implementing the disclosed methods are stored on computer-readable media. Additionally, other embodiments may include reception of different broadcasts, such as television, satellite and other broadcasts. Other features and advantages of the invention will become apparent with reference to the following detailed description and figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[09]   The invention will be described in detail in the following description of preferred embodiments with reference to the following figures wherein:

[10]   FIG. 1 shows an exemplary layout of a system according to the present invention including a mobile terminal device adapted to receive radio broadcasts and that is in communication with a network;

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[11]   FIG. 2 shows a functional block diagram of the device of Fig. 1;

[12]   FIG. 3 shows a flow diagram for operation of the system of Fig. 1 in accordance with selection of a radio bookmark of the present invention;

[13]   FIG. 4 shows a layout of another embodiment of a system according to the present invention including a mobile terminal device adapted to receive radio broadcasts and that is in communication with a network;

[14]   FIG. 5 shows a functional block diagram of the device of Fig. 4;

[15]   FIG. 6 shows a flow diagram for operation of the system of Fig. 4 in accordance with selection of a radio bookmark of the present invention;

[16]   FIG. 7 shows a layout of a further embodiment of a system according to the present invention including a mobile terminal device adapted to receive radio broadcasts and that is in communication with a network;

[17]   FIG. 8 shows a flow diagram for operation of the system of Fig. 7 in accordance with selection of a radio bookmark of the present invention.

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DETAILED DESCRIPTION OF THE INVENTION

[18]   The invention may be embodied in various forms. As shown in Figs. 1 and 2, one embodiment according to the present invention includes a mobile data terminal device (DTE) 10 in communication with a data communication network 12 and a broadcast network 14. The broadcast network may include radio waves associated with a radio station (not shown) that are transmitted from a transmitter 16, or may include television, satellite or other types of digital or analog broadcasts. The data communication network 12 may communicate with a broadcast station server 18 also associated the radio station (not shown). The DTE 10 generally includes a display screen 20, memory 22, a keypad 24, a processor 26, a radio tuner 28, an antenna 30, and communication hardware 32. As is known in the art, the processor 26 performs steps according to instructions stored in the memory 22 and generally interacts with other components of the DTE 10. The display screen 20 displays images and the keypad 24 is adapted to receive inputs from an operator.

[19]   The antenna 30 may receive radio waves in the radio broadcast network 14 transmitted by the transmitter 16, as is known in the art. The radio tuner 28 is connected to the antenna 30 and is adapted to tune, demodulate and amplify selected frequencies of radio waves received by antenna 30, such as those transmitted from transmitter 16. The communication hardware 32 is adapted to receive and modulate or demodulate wireless communication signals, such as microwaves, sent or received from the DTE 10, as is known in the art. Thus, the device 10 according to one embodiment comprises a mobile terminal device that is capable of receiving radio station broadcasts while simultaneously communicating with a data network. The device of the present invention, however, is not limited to any particular embodiment of a device, provided the device has both data connectivity and broadcast reception capabilities.

[20]   Further, the device of present invention is not limited to any particular embodiment for enabling data connectivity or broadcast reception. For example, the DTE 10 may

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use a circuit switched connection for data connectivity, such as a second-generation wireless system using TDMA (Time Division Multiple Access), CDMA (Code Division Multiple Access), GSM (Global System for Mobile Communications), or other such access systems. In other examples, DTE 10 may use a packet based access system, such as GPRS (General Packet Radio Service) over a GSM network, or short range connectivity systems such as WLANs (Wireless local area networks) or Bluetooth®. With regard to broadcast tuning, DTE 10 may receive, for example, analog radio transmissions, digital radio transmissions, satellite radio transmissions, analog television transmissions, digital television transmissions, or other such broadcasts.

[21]   According to one embodiment, radio bookmarks 34 are stored in the memory 22, and may be programmed and selected by the user. The radio bookmarks 34 generally include handles or identifiers pointing to various resources such as files, Internet protocol (IP) addresses, uniform resource locators (URL), and the like. The bookmarks may also include parameters that further define the bookmarks. The radio bookmarks 34 generally have combined functionality such that selection of a bookmark 34 results in selection of both a network address and a radio frequency, both of which are associated with a particular radio station. Accordingly, a user simply selects a radio bookmark 34 in order to tune the tuner 28 to frequencies of radio waves for a radio station, such as those transmitted by transmitter 16, and to substantially simultaneously connect the device 10 with a server located at a network address associated with the radio station, such as broadcast station server 18.

[22]   For example, suppose that the radio transmitter 16 transmits FM radio waves for a certain radio station (not shown), for instance a radio station having the call sign WZZZ, and that the broadcast station server 18 is operated by radio station WZZZ. Suppose also that radio station WZZZ maintains a web site on broadcast station server 18 that provides information supplemental to its FM radio broadcast. Suppose also that the radio station is a favorite radio station for the user and that the user has programmed bookmark one 36 to include frequency information for the radio station

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broadcast and the network address of the radio server 18. As such, in order to listen to the radio broadcast and to view web content for the radio station, the user merely needs to select bookmark one 36. The user may select bookmark one 36 using keypad 24 to select a representation of bookmark one 36 shown on the display 20, as is known in the art for graphical user interfaces. Alternatively, the user may select a key on keypad 24 associated with bookmark one 36, or use other such methods to choose a bookmark.

[23] Referring now to Fig. 3, when the user selects bookmark one 36, the processor follows instructions stored in the memory 22 and performs associated steps. Accordingly, the processor 26 detects 40 the user's selection of bookmark one 36. Bookmark one 36 points to both a radio player application 38 stored in the memory 22 and a browser application 40, such as a wireless markup language (WML) application. Bookmark one 36 also includes parameters 42 that include frequency information for radio station WZZZ and web site address information. Parameters generally include information or data that further define one or more bookmarks or that affect performance of the DTE 10 based on selection of associated bookmarks. Parameters may include frequency information and network address information, as well as other types of information, some examples of which are discussed below.

[24] Selection of bookmark one 36 invokes both radio player application 38 and browser application 40, and provides information in parameters 42 to the respective applications 38, 40. According to the radio player application, the processor 26 tunes 52 the radio tuner 28 to the frequency parameter 42 for bookmark one 36 for receiving the associated radio station broadcast. According to the browser application 40, the tuner sends 54 a request to the network address of broadcast station server 18 requesting data for the radio station website. The step of sending 54 a request may include opening a communication channel using communication hardware 32, if it is not already open. For example, if communication with communication network 12 is via a circuit switched connection like GSM, then the connection is open for the time of service and is closed when service use ends. Thus, a communication channel may

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need to be opened prior to sending 54 any requests. This may also be applicable for a packet switched connection, such as GPRS, if the connection has not yet been established.

[25]   In response to sending 54 a request, the broadcast station server 18 returns data to the device 10 and the processor 26 receives 56 the data. At this point, a session may be established with broadcast station server 18, which is managed by the browser application 40 and the server 18. In accordance with one embodiment, when data is received, the processor displays a web page (not shown) for the radio station, which includes links that the user may select. In accordance with another embodiment, update data is frequently received to update the web page. In this way, regardless of user input, information displayed on DTE 10 is substantially synchronized with the radio broadcast to reflect current content of the broadcast, such as the name of a song being played or to provide input opportunities, such as for a quiz or contest being broadcast on the station. When the processor detects that the user selects 58 a link shown in the display 20, the processor 26 directs the device 10 to request 60 data from broadcast station server 18 for that link. Accordingly, by simply selecting bookmark one 36, the user may listen to the radio station broadcast, browse the radio station web site, and thereby receive information supplemental to the radio broadcast.

[26]   In another embodiment of the invention, the frequency and IP address parameter information may not be stored on the device, but may be stored remotely, such as on a server in communication with network 12. This provides many benefits, such as allowing the user to program radio bookmarks for different radio stations depending on other programmed parameters. For example, the user may desire bookmark one 36 to represent the strongest classical music radio station for the user's present location. This may be particularly beneficial for a user who travels frequently. The user's present location is an example of an additional parameter that may be useful for adding flexibility to the use of radio bookmarks. The user's location may be automatically determined, for example, using global positioning system (GPS) technology.

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NC 28582 BW 004770.00047

[27]   In another example, a parameter could be a unique apparatus id associated with the DTE 10, such that the radio frequency and IP address for a particular bookmark are related to the apparatus id. Another example of a parameter is a unique user id, wherein the radio bookmarks on a device are adapted according to a unique user id, such as username and password. Multiple parameters can add even further flexibility. In a further example, the bookmarks 34 on a particular device 10 may represent different radio stations for different users of the device. As such, a user may need to input a unique user id, which may be manually entered as a username and password, or entered through the insertion of an identification module in to the device, or other like means. Accordingly, the parameter may be a unique user id and the bookmarks may represent radio stations or preferences for radio stations according to individual users' programming.

[28]   In further examples, parameters may include preferences established by the user, such that a bookmark represents different stations based on the time of day, location, or other factors. For example, a user may prefer that bookmark one 36 refer to travel information during rush hour, rock music during the daytime, and classical music in the evening. In another example, a user profile may be established based on statistical information of the user provided to a bookmark web site that creates bookmarks. The bookmark website may forward bookmarks to DTE 10 that the user could choose to accept. In a different example, a bookmark could represent a particular station, and based on a location parameter for the user, a different broadcast frequency may be applicable for that station. In an example with a radio station chain, the bookmark could represent the chain, and based on a user location parameter, a frequency for a station within the chain could be appropriate.

[29]   The bookmarks 34 and their parameters may be programmed according to software stored on the DTE 10 using keypad 24, or through an interface with another computer such as through a universal serial bus (USB) connection or network communications, or other known methods for programming mobile data terminals. In other examples, the bookmarks 34 and their parameters may be programmed remotely and sent to

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DTE 10 over the air (OTA). In such an example, a friend of the user may send a bookmark to the user as a recommendation for a broadcast station. This could be accomplished using a short messaging service (SMS), such as Nokia Smart Messaging®. In another example, a user may request a bookmark from a broadcast station using an SMS message, or through a web-based service. Further, a broadcast station server may send a whole set of bookmarks based on a user profile. In a further example, a user may use a web-based service to configure their bookmarks for DTE 10, and then update DTE 10 via OTA communications. In general, when DTE 10 receives a message that is recognized as a bookmark, it may automatically, or after user verification, store the bookmark in memory.

[30] To provide further flexibility and further illustrate the use of parameters with bookmarks, another embodiment of the present invention, as shown in Fig. 4, includes a mobile data terminal (DTE) 110, a station id server 113, a broadcast station server 118, and a transmitter 116. The DTE 110 may be in communication with communication network 112 and broadcast network 114. The station id server 113 and broadcast station server 118 are generally in communication with communication network 112. The transmitter 116 broadcasts radio waves in broadcast network 114. The station id server 113 generally includes a server that identifies a broadcast station based on a bookmark selected and other parameters sent to the station id server. The station id server 113 generally includes a storage medium 115 and a processor 117 for processing instructions contained in the storage medium. For illustration purposes, suppose that the user shares DTE 110 with a family member and has therefore manually entered a unique user id that identifies the user and his bookmark preferences. Suppose further that the device 110 is generally configured as shown in Fig. 5, which is similar to DTE 10 in the previous embodiment except for differences and aspects discussed herein.

[31] Accordingly, DTE 110 includes bookmark one 136 and bookmark two 137, which are stored in memory 122 and are graphically displayed on display 120. Each of the bookmarks 136, 137 point to a radio player/web site viewer application 139 and the

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parameter of a user id 141. The player/viewer application 139 according to one embodiment is a browser application running a Flash® or SMIL (Synchronized Multimedia Integration Language) plug-in. The application 139 may be included in the terminal's initial software suite, or it may be downloaded or otherwise installed on DTE 10. When bookmark one 136 is selected, it invokes application 139 and points it to the unique user id 141 stored in memory 122. The application 139, based on the bookmark selected and the user id 141, instructs the processor 126 to set up the DTE to receive a broadcast and connect with a web site for the selected bookmark and user id parameter. Thus, bookmarks may be uniquely configurable for different users of the same device.

[32]   Use of the present invention according to such an embodiment is generally illustrated in Fig. 6. The user starts the process in step 150 by selecting a radio bookmark, for example bookmark one 136, on the DTE 110. In response to selection of bookmark one 150, which invokes application 139, the processor 126 performs the step of sending 170 a request for radio broadcast frequency information and a network service address of a radio station broadcast station server 118 to the station id server 113. The request is related to a particular bookmark, such as bookmark one 136, and is based on related parameters, such as unique user id 141. The station id server 113 receives the request including the unique id parameter 141, determines the appropriate frequency information and network address information for bookmark one 136 and unique user id 141, and returns 172 the information to DTE 110 via the communication network 112. The DTE 110 thereafter tunes 174 the tuner 128 to receive the radio broadcast and requests 176 data from the broadcast station server 118 located at the network address returned. Server 118 preferably sends data associated with the radio station web site, which DTE 110 receives 178 via network 112. The user is therefore able to view the web site display for the server 118 and may select 180 a link shown on the web site display. In response to such a selection, the processor 126 requests 182 data associated with the selected link.

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[33] Referring now to Figs. 7 and 8, a further embodiment of the present invention is shown, which generally includes all aspects and preferences of the previous embodiment except with regard to message flows between DTE 210, station id server 213, and broadcast station server 218. Like numbers shown herewith, refer to like components, steps and features as previous embodiments. Accordingly, as a user selects 250 a radio bookmark on DTE 210, the processor receives the inputs and sends 270 a request to the station id server 213 via network 212. The request is likewise for broadcast information and a network address for server 218 for a radio station based on the bookmark selected and the parameter of a user's unique user id. The station id server 213 selects the appropriate radio station for the bookmark selected and parameters sent, and redirects 290 the request for the network address of server 218 to server 218 for the selected radio station. The broadcast station server 218 in turn sends 292 frequency information and the network address for its website to DTE 210.

[34] After receiving frequency and network address information from server 218, the DTE 210 tunes 294 the tuner to receive the radio station broadcast. Preferably, included with the information sent from server 218 is web site data for the radio station's web site. Accordingly, as DTE 210 receives 296 the web site data it displays the web site information on DTE display. If the user then selects 298 a link from the web site display, DTE 210 sends 299 a request for data according to the link via network 212. The request for data associated with the link may be to a different server in communication with network 212 or to server 218.

[35] While the present invention has been described in connection with the illustrated embodiments, it will appreciated and understood that modifications may be made without departing from the true spirit and scope of the invention. In particular, the invention applies to any computing device adapted to receive radio broadcasts and having data connectivity. Further, the radio broadcasts are not limited to FM radio, and may include analog or digital broadcasts.

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CLAIMS

I/We claim:

1.   An apparatus for communicating with a data network and for receiving broadcast media, the apparatus comprising:

a storage medium; and

a processor coupled to the storage medium that performs steps comprising:

(a)   detecting an input from a command entry device selecting a bookmark stored in the storage medium;

(b)   tuning a receiver to a broadcast frequency associated with the bookmark for receiving broadcast media from a broadcast media station; and

(c)   sending a request to a broadcast station server via the data network for information related to the broadcast media station.

2.   The apparatus of claim 1, wherein the processor further performs the steps of:

(d)   receiving information from the broadcast station server; and

(e)   displaying the information received in step (d) on a display of the apparatus.

3.   The apparatus of claim 1, wherein the bookmark comprises a radio bookmark, the broadcast media comprises a radio broadcast, and the broadcast media station comprises a radio station.

4.   The apparatus of claim 1, wherein the apparatus comprises a mobile terminal device.

5.   The apparatus of claim 1, wherein the broadcast media comprises analog broadcast media.

6.   The apparatus of claim 1, wherein the broadcast media comprises digital broadcast media.

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7.   The apparatus of claim 1, wherein the processor further performs the steps of:

(f)   sending a request for the broadcast frequency to a station id server via the data network; and

(g)   receiving data indicative of the broadcast frequency.

8.   The apparatus of claim 7, wherein for step (f) the data indicative of the broadcast frequency is received from the station id server.

9.   The apparatus of claim 7, wherein for step (f) the data indicative of the broadcast frequency is received from the broadcast station server associated with the broadcast media station.

10.   The apparatus of claim 1, wherein the bookmark comprises a pointer and at least one parameter.

11.   The apparatus of claim 10, wherein the bookmark is programmable by a user of the apparatus.

12.   The apparatus of claim 10, wherein the at least one parameter is selected from the group consisting of a broadcast frequency for a broadcast media station, a radio station call sign, a television station call sign, a unique user id, a unique apparatus id, user location information, and broadcast classification information.

13.   The apparatus of claim 12, wherein the unique user id comprises a username and a password.

14.   The apparatus of claim 12, wherein the broadcast media comprises a radio broadcast and the broadcast classification information comprises a music category.

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15.   The apparatus of claim 1, wherein the request of step (c) is sent to the broadcast station server through a station id server that redirects the request to the broadcast station server.

16.   A server for determining a broadcast media station for a data terminal device based on a bookmark selected on the data terminal device, the server comprising:

a storage medium; and

a processor for performing steps comprising:

(a)   receiving a request from the data terminal device for broadcast frequency information and a network address for a broadcast station server in response to selection of the bookmark; and

(b)   determining a broadcast media station based on the bookmark.

17.   The server of claim 16, wherein the processor performs steps further comprising:

(c)   sending data indicative of the broadcast frequency information to the data terminal device; and

(d)   sending data indicative of the network address to the data terminal device.

18.   The server of claim 16, wherein the processor performs steps further comprising the step of redirecting the request of step (a) to the broadcast station server associated with the broadcast station.

19.   The server of claim 16, wherein the bookmark comprises a pointer and at least one parameter.

20.   The server of claim 19, wherein the at least one parameter is selected from the group consisting of a broadcast frequency for a broadcast media station, a radio station call sign, a television station call sign, a unique user id, a unique apparatus id, user location information, and broadcast classification information.

21.   The server of claim 20, wherein the unique user id comprises a username and a password.

22.   The server of claim 20, wherein the broadcast media station is a radio station and the broadcast classification information comprises a music category.

23.   The server of claim 16, wherein the broadcast media station is a radio station.

24.   A computer readable medium having computer-executable instructions for performing steps comprising:

(a)   detecting an input from a command entry device selecting a bookmark stored in a storage medium;

(b)   tuning a broadcast media receiver to a frequency associated with the bookmark for receiving broadcast media from a broadcast media station; and

(c)   sending a request to a broadcast station server for information related to the broadcast media station.

25.   The computer readable medium of claim 24, the steps further comprising:

(d)   sending a request for the frequency to a station id server; and

(e)   receiving data indicative of the frequency.

26.   The computer readable medium of claim 25, wherein for step (e) the data indicative of the frequency is received from the station id server.

27.   The computer readable medium of claim 25, wherein for step (e) the data indicative of the frequency is received from a broadcast station server associated with the broadcast media station for the frequency.

28.   The computer readable medium of claim 24, wherein the bookmark comprises at least one parameter and step (c) comprises the step of sending the at least one parameter.

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29.   The computer readable medium of claim 28, wherein the at least one parameter is selected from the group consisting of a broadcast frequency for a broadcast media station, a radio station call sign, a television station call sign, a unique user id, a unique apparatus id, user location information, and broadcast classification information.

30.   The computer readable medium of claim 24, wherein the broadcast media station comprises a radio station.

31.   A computer readable medium having computer-executable instructions for performing steps comprising:

(a)   receiving a request from a data terminal device via a communication network for a broadcast frequency and a network address for a broadcast station server in response to selection of a bookmark on the data terminal device; and

(b)   determining a broadcast media station based on the bookmark.

32.   The computer readable medium of claim 31, further comprising the steps of:

(c)   sending data indicative of the broadcast frequency to the data terminal device via the communication network; and

(d)   sending data indicative of the network address to the data terminal device via the communication network.

33.   The computer readable medium of claim 31, further comprising the step of redirecting the request of step (a) to the broadcast station server associated with the broadcast station.

34.   The computer readable medium of claim 31, wherein the bookmark comprises at least one parameter.

35.   The computer readable medium of claim 31, wherein the at least one parameter is selected from the group consisting of a broadcast frequency for a broadcast

media station, a radio station call sign, a television station call sign, a unique user id, a unique apparatus id, user location information, and broadcast classification information.

36.   A method for receiving broadcast media from a broadcast media station and communicating with a broadcast station server, the method comprising:

(a)   detecting an input from a command entry device of a terminal device selecting a bookmark stored in a storage medium of the terminal device;

(c)   tuning a broadcast media receiver of the terminal device to a frequency associated with the bookmark for receiving broadcast media from the broadcast media station; and

(c)   sending a request to the broadcast station server for information related to the broadcast media station.

37.   The method of claim 36, further comprising:

(d)   sending a request for the frequency to a station id server; and

(e)   receiving data indicative of the frequency.

38.   The method of claim 37, wherein the data indicative of the frequency is received from the station id server.

39.   The method of claim 37, wherein the data indicative of the frequency is received from the broadcast station server.

40.   A method for communicating with a data terminal device via a communication network for providing bookmark information to the terminal device, the method comprising:

(a)   receiving a request from the data terminal device via the communication network for a broadcast frequency and a network address for a broadcast station server in response to selection of a bookmark on the data terminal device; and

(b)   determining a broadcast media station based on the bookmark.

41.   The method of claim 40, further comprising the steps of:

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(c)   sending data indicative of the broadcast frequency to the data terminal device via the communication network; and

(d)   sending data indicative of the network address to the data terminal device via the communication network.

42.   The computer readable medium of claim 40, further comprising the step of redirecting the request of step (a) to the broadcast station server associated with the broadcast station.

43.   A mobile terminal device comprising:

a storage medium;

a radio bookmark stored in the storage medium associated with a radio station, the radio bookmark pointing to a frequency for receiving a radio broadcast for the radio station and pointing to a network address for a radio station server for the radio station;

a command entry device;

a display;

a radio receiver;

an antenna; and

a processor coupled to the storage medium that performs steps comprising:

(a)   detecting an input from the command entry device selecting the radio bookmark;

(b)   tuning the radio receiver to the frequency for the radio station; and

(c)   sending a request to the radio station server via a data network for information related to the radio station;

(d)   receiving information from the radio station server; and

(e)   displaying the information received in step (d) on the display.

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ABSTRACT OF THE INVENTION

A system and method is provided for permitting a data terminal to connect to a broadcast station web site and to receive a broadcast station broadcast in response to selection of a bookmark. Selection of the bookmark results in a tuner on the data terminal being tuned to receive a broadcast while the data terminal substantially simultaneously connects to a web site for the broadcast station. Broadcast frequency information and web site address information for the bookmark may be stored on the data terminal, or such information may be stored remotely, such as on a station id server in communication with the data terminal. The bookmark may be programmed by the user and may represent different broadcast stations according to parameters.

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Banner & Witcoff Ref. No.   004770.00047
Client Ref. No.   NC 28582

JOINT DECLARATION FOR PATENT APPLICATION

As the below named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below next to our names:

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled **SYSTEM AND METHOD FOR BOOKMARKING BROADCAST RADIO STATIONS AND ASSOCIATED INTERNET ADDRESSES**, the specification of which:

     X   is attached hereto.

     was filed on _____ as Application Serial Number _____ and was amended on _____ (if applicable).

     was filed under the Patent Cooperation Treaty (PCT) and accorded International Application No. _____, filed _____, and amended on _____ (if any).

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

We hereby acknowledge the duty to disclose information which is material to patentability in accordance with Title 37, Code of Federal Regulations, 1.56(a).

Prior Foreign Application(s)

We hereby claim foreign priority benefits under Title 35, United States Code, 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application(s) for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Country	Application No.	Date of Filing (day month year)	Date of Issue (day month year)	Priority Claimed Under 35 U.S.C. 119

Prior United States Provisional Application(s)

We hereby claim priority benefits under Title 35, United States Code, 119(e)(1) of any U.S. provisional application listed below:

U.S. Provisional Application No.	Date of Filing (day month year)	Priority Claimed Under 35 U.S.C. 119(e)(1)

Prior United States Application(s)

We hereby claim the benefit under Title 35, United States Code, 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, 112, we acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

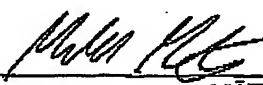| Application Serial No.	Date of Filing (Day, Month, Year)	Status IJ Patented, Pending, Abandoned

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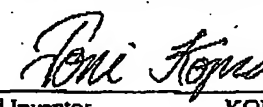Client Ref. No.   NC 28582

Power of Attorney

We hereby appoint, both jointly and severally, as our attorneys, all Banner & Witcoff, Ltd. attorneys indicated therein under PTO Customer Number #22907, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office. All correspondence and telephone communications should be addressed to:
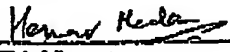
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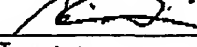
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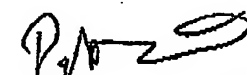
Signature _____   Date April 17, 2002

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                                    Family Name   First Given Name   Second Given Name
Residence Helsinki, Finland _____ Citizenship Finland
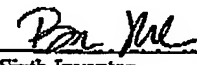Post Office Address . Airoranta 9A. 00830 Helsinki. FINLAND

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Signature _____   Date _19th of April, 2002_
Full Name of Sixth Inventor _HEIKKINEN_   _Barbara_
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Residence _Espoo, Finland_   Citizenship _Finland_
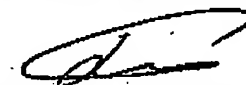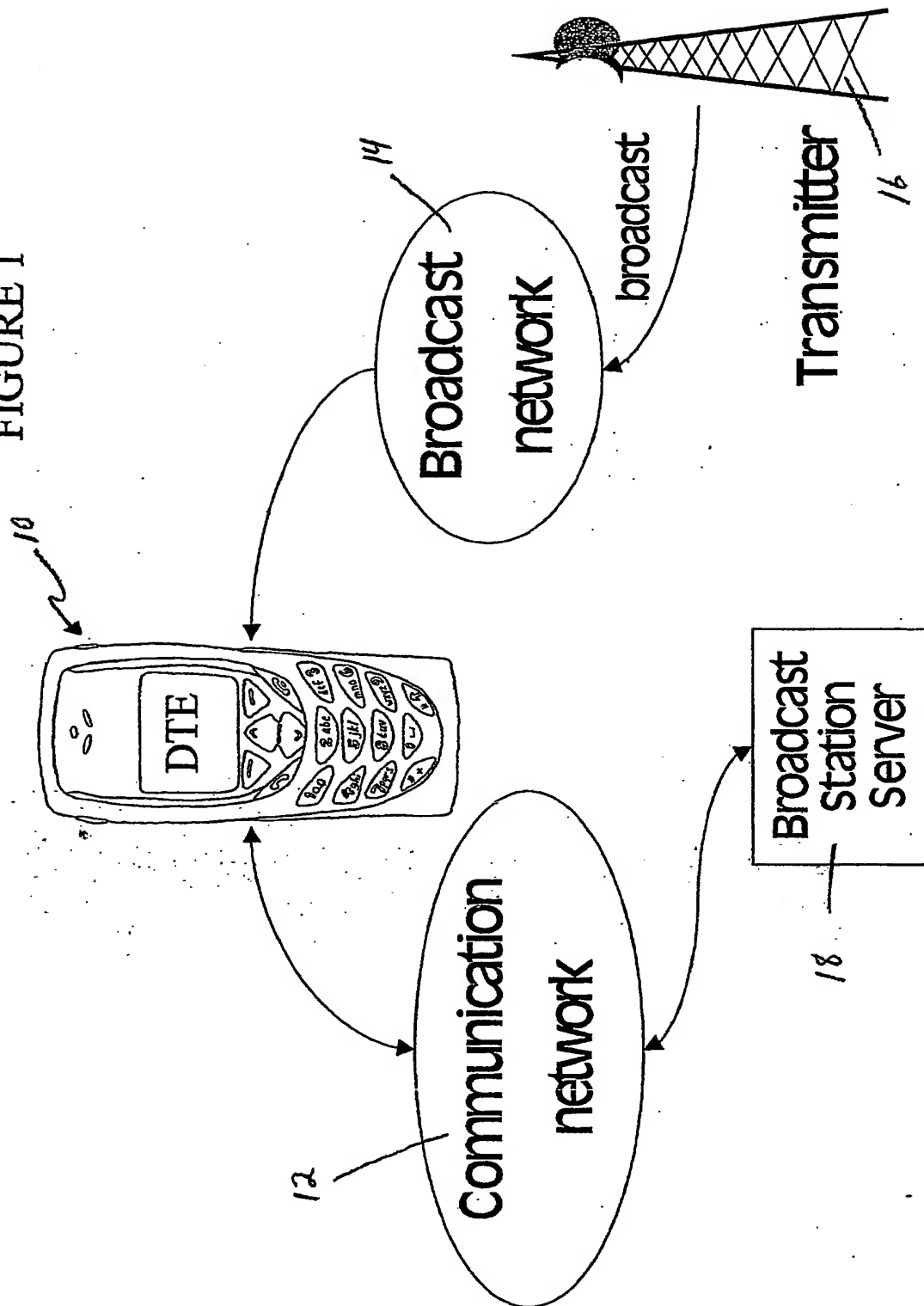Post Office Address _Kilonrinne 7 D 18, 02610 Espoo, FINLAND_

Signature _____   Date _April 17, 2002_
Full Name of Seventh Inventor _BELETSKI_   _Oleg_
     Family Name   First Given Name   Second Given Name
Residence _Helsinki, Finland_   Citizenship _Finland_
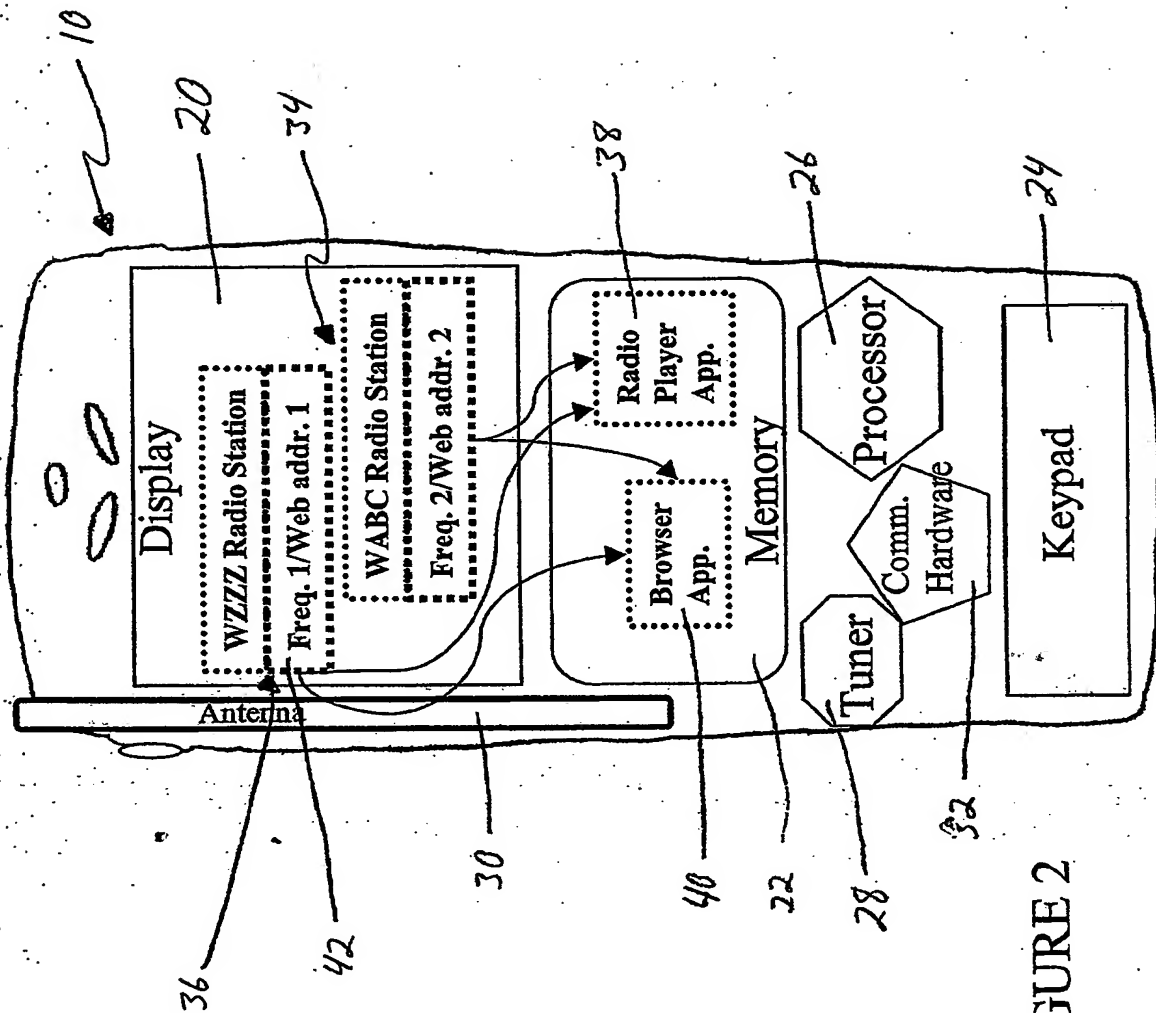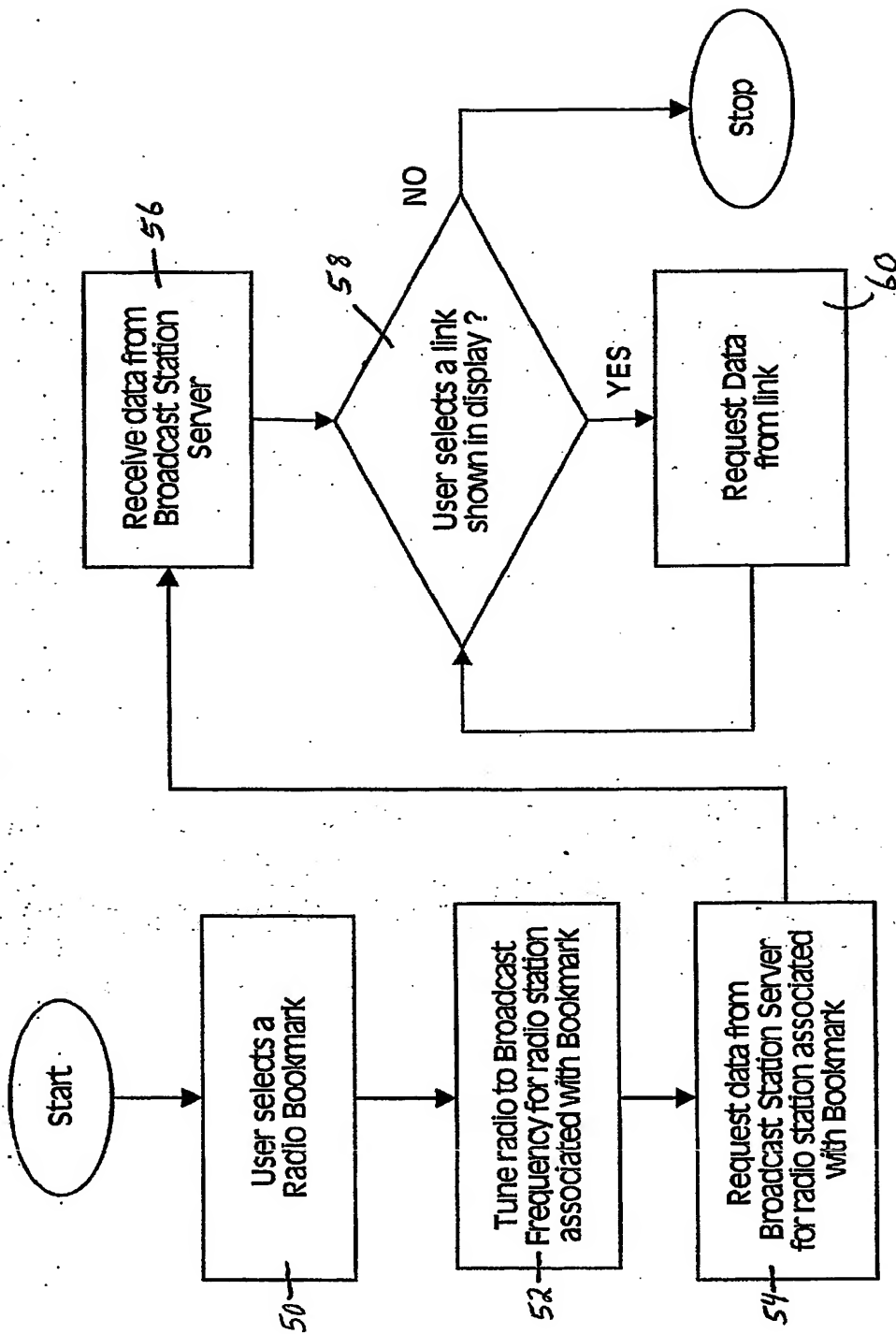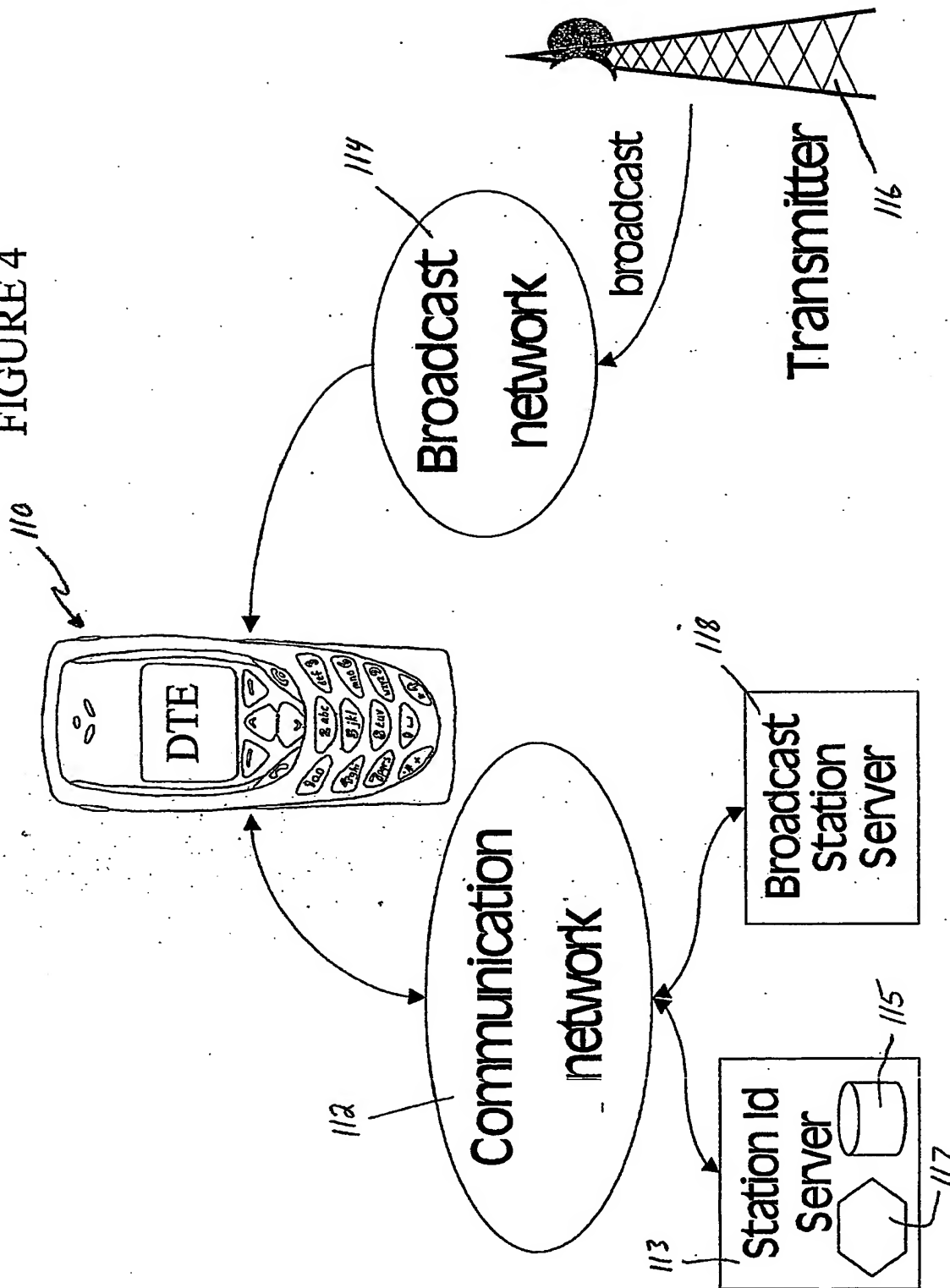Post Office Address _Valtmiemenkatu 4 E 89, 00210 Helsinki, FINLAND_

FIGURE 1

Broadcast
network

14

broadcast

Transmitter

16

DTE

10

Communication
network

12

Broadcast
Station
Server

18

FIGURE 2

FIGURE 3

start

User selects a Radio Bookmark — 50

Tune radio to Broadcast Frequency for radio station associated with Bookmark — 52

Request data from Broadcast Station Server for radio station associated with Bookmark — 54

Receive data from Broadcast Station Server — 56

User selects a link shown in display? — 58

NO → Stop

YES

Request Data from link — 60

FIGURE 4

110

DTE

114

Broadcast
network

broadcast

Transmitter

116

112

Communication
network

Broadcast
Station
Server

118

Station Id
Server

113

115

117

Display 120

Music Station 1

Music Station 2

Antenna

User Id 141

Radio player/viewer app. 139

Memory 122

Tuner 128

Processor 126

Comm. Hardware

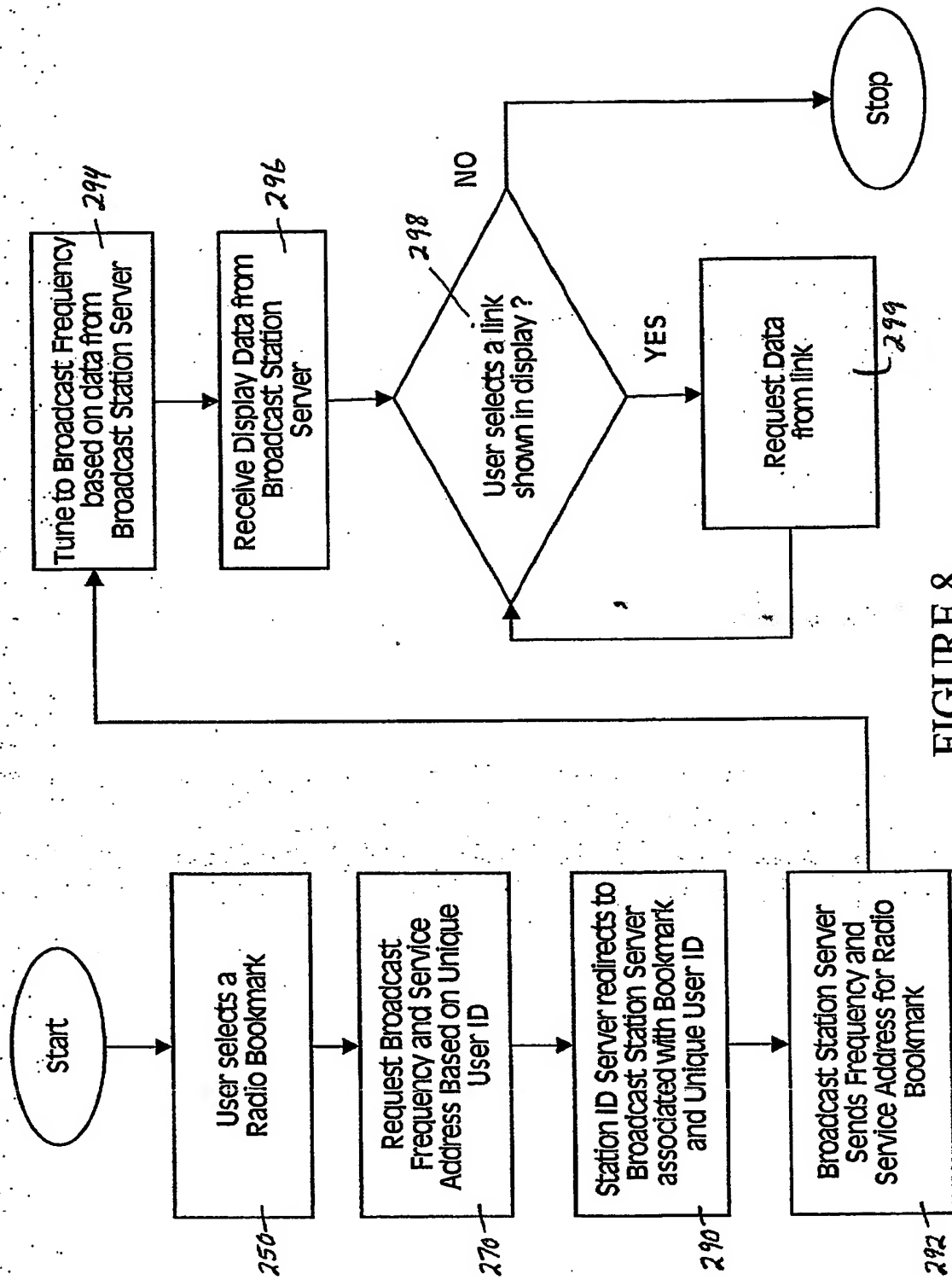Keypad

110

136

FIGURE 5

FIGURE 6

FIGURE 7
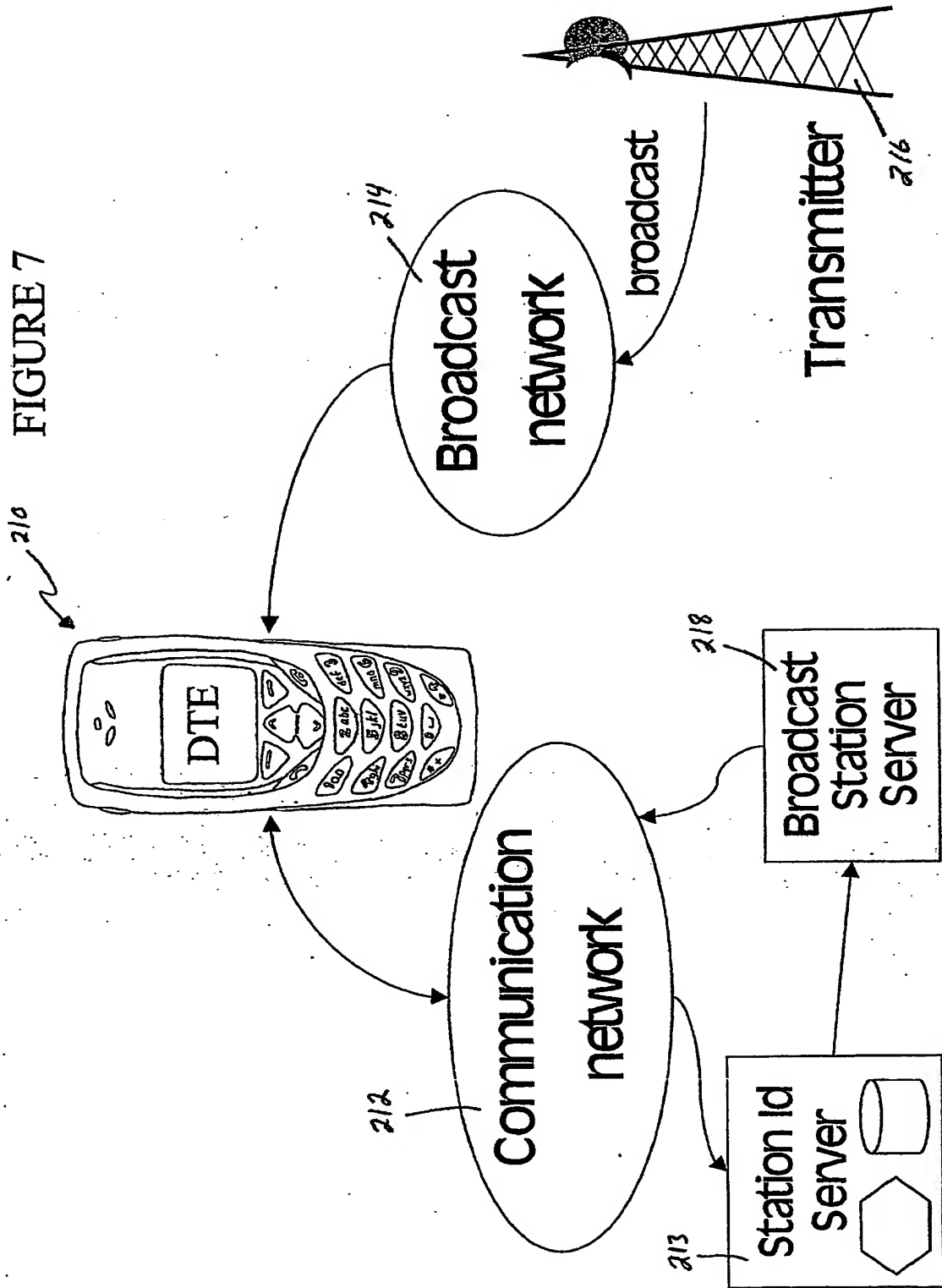
FIGURE 8

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